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IDENTIFIERS	*Indian Hills Community College IA

ABSTRACT

A program at Indian Hills Community College (Ottumwa, Iowa) consisted of a sex equity component aimed to prepare women to enter nontraditional occupations and a building trades component to enable electrical workers to upgrade their skills. Both of the targeted groups underwent assessment and upgrading coordinated through the college's SUCCESS (Skill Upgrading for College and Careers Ensuring Student Success) center. The women participated in a program to obtain a High Technology diploma with studies primarily in the areas of personal computers, both hardware and software. The building trades component consisted of two segments. The first segment provided electronics and related courses to develop minimum competencies for coping with the installation and maintenance training offered in the second segment. The second segment included a laser course. These courses were conducted on Fridays and Saturdays and were attended mostly by employed people. As a result of the program, 28 women completed upgrade classes and 13 completed the High Technology program. Ten students completed upgrade classes and five completed the training program for the building trades component. Evaluation of the project showed that fewer students than anticipated were served, probably because of the extensive time commitments required during the 13-month components. Recommendations were made to incorporate the program components into the regular curriculum as 2-year courses. (Appendixes list the monitoring groups and provide an overview of the women in technology component.) (KC)

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ED333136

COOPERATIVE DEMONSTRATION PROGRAM FOR HIGH TECHNOLOGY TRAINING

PERFORMANCE REPORT

a project of

Indian Hills Community College
Ottumwa, Iowa
"Where People Master Technology"

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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CE058092

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INDIAN HILLS COOPERATIVE DEMONSTRATION PROGRAM
(V199A90115)

January 1, 1989
through
June 30, 1990

PROGRAM FUNDING
"COOPERATIVE DEMONSTRATION PROGRAM (HIGH TECHNOLOGY)"

FUNDING AGENCY
OFFICE OF VOCATIONAL and ADULT EDUCATION
U.S. DEPARTMENT OF EDUCATION

PERFORMANCE REPORT
COMPLETED
APRIL, 1991

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INTRODUCTION

Indian Hills Community College has an interesting history. Established as Merged Area XV by the Iowa State Board of Public Instruction, representing ten counties in southeastern Iowa, the school began operation as Iowa-Tech Area XV Community College July 1, 1966. The Merged Area Board assumed responsibility for operation of Centerville Junior College on July 1, 1968, and in turn merged boards with Ottumwa Heights College on July 1, 1979. The Ottumwa Heights facility was purchased by the Indian Hills Community College Board of Directors in 1981. Since its inception, Indian Hills has grown and reacted to the changing needs of the area it serves and beyond. Expansion is an on-going process; evidenced by a library in 1984, an academic hall and life center in 1985, the Economic Development Center in 1987, and a new Advanced Technology Center which was completed in 1990.

The college, in Ottumwa, Iowa (population 25,000) is situated in an isolated, rural area which has been designated economically depressed by the Economic Development Administration. Currently, this ten county area of 150,000 is serviced by no scheduled airlines, and has no interstate highway going through it. Moreover, with the farm crisis of the mid-eighties, prolonged drought conditions and a mild exodus of people, the overall economic situation and attitude has not been positive. In stark contrast, Indian Hills has flourished as a mecca for progressive training and retraining in providing a wide array of educational and vocational opportunities.

Demographically; for Indian Hills Community College:

95% of the students are Iowa residents.
81% are from the ten counties of Area XV.
76% are first generation college students.
73% qualify to receive financial aid.

The keys to local recovery seem to be diversity and education. As in many locations throughout the United States, the traditional family with the husband as the bread-winner is a rapidly eroding condition, and women, both as family members and as single parents, are faced with a need to provide income. For these people, the

community college has played a critical role and is a primary force in effecting a return to normalcy. As the economic rebound continues, Indian Hills can help people and companies grow through upgrading, continuing education, and an awareness to particular needs of the state and area, most especially those addressing non-traditional students during unconventional time periods.

A particular concern in Area XV is the increase of single parents, particularly women who find themselves unprepared to function in a job that provides a better income than governmental assistance programs. Without exposure to non-traditional vocational options, encouragement and support, their plight continues sometimes to the point of affecting personalities and their children. Obviously, the answer is education. It is to this end that our program was developed.

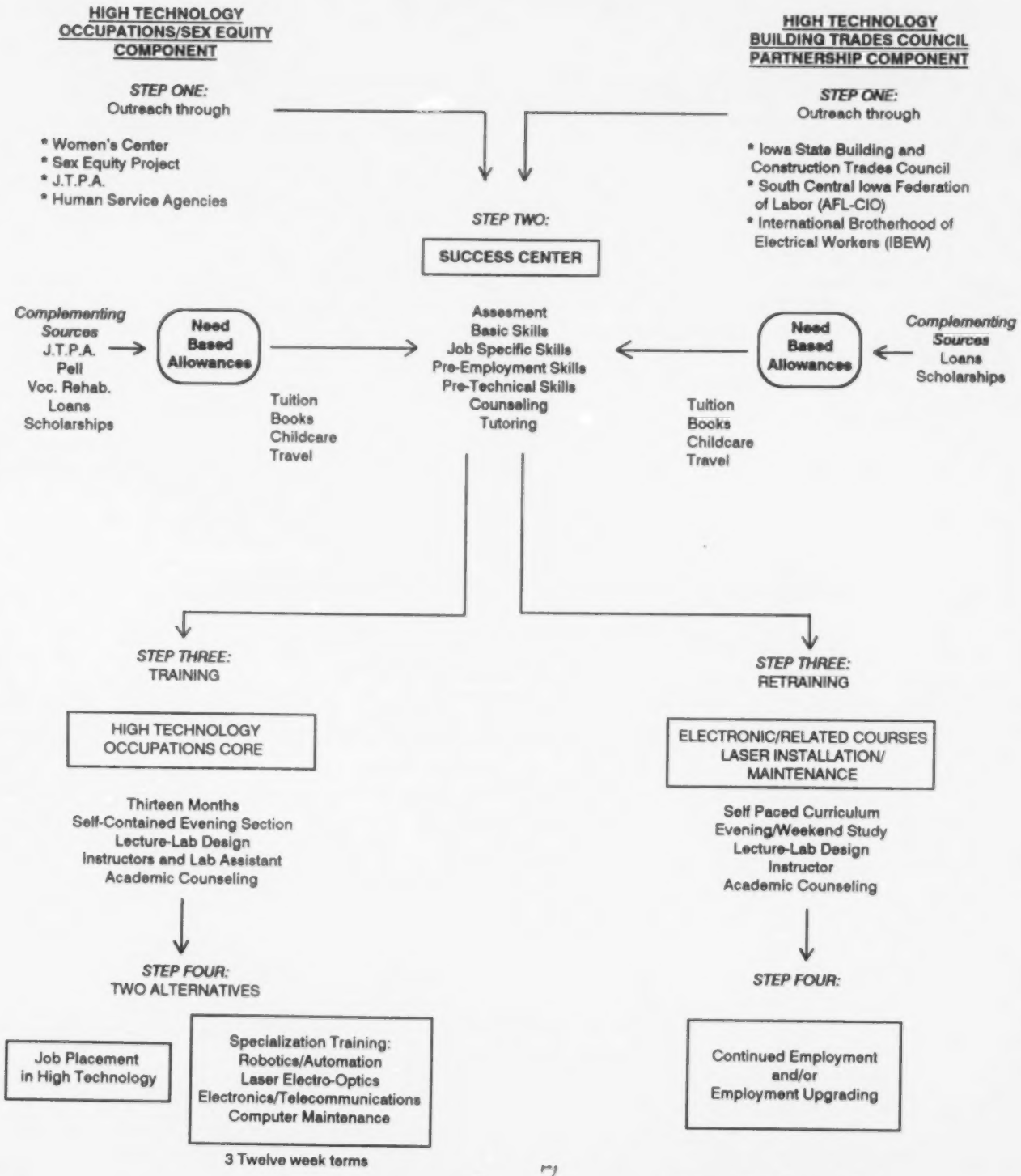
A second critical need that IHCC addressed is the retraining of presently employed workers who do not possess the necessary skills that will be required for continued employment. This was seen to be essential regardless of the age of the worker; however, it is especially critical to the worker who has invested fifteen to twenty-five years in a profession only to see that his/her skills will force a career change if additional training is not completed. An excellent example of this condition is in the area of electrical workers who have basic skills but are not prepared for the emerging technologies such as Laser/Electro-Optics.

Specific evidence of the need for this project was demonstrated through the formal requests we received from the private sector to supply skilled women for jobs in high technology and to provide re-training in high technology for building trades workers.

For these reasons, the program was structured with two primary components: a sex equity component to deal specifically with preparing women to enter non-traditional occupations, and a building trades component to enable existing electrical workers to upgrade their skills.

For a graphic representation of this structure see page 3, Program Design.

INDIAN HILLS COMMUNITY COLLEGE
COOPERATIVE DEMONSTRATION PROGRAM
PROGRAM DESIGN



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PROGRAM DESCRIPTION

All vocational programs at Indian Hills employ active advisory councils from the private sector, who meet quarterly to review curriculum, occupational needs, quality of program graduates, placement records, and overall program quality. In 1987, our High Technology Advisory Committee was recognized as the Outstanding Advisory Committee in Iowa. In addition, the committee received a national award from Secretary William Bennett.

Our Demonstration Program provides improved access to quality high technology programs. The two primary groups targeted were: women who will participate in programs designed to eliminate sex bias and stereotyping, and employed trades workers who were in need of re-training.

Both of the targeted groups underwent assessment and up-grading coordinated through our S.U.C.C.E.S.S. Center (Skill Upgrading for College and Careers Ensuring Student Success). The S.U.C.C.E.S.S. Center provides testing, remedial programs, and developmental studies, and it is closely coordinated with our instructional programs.

This Cooperative Demonstration program was designed to meet the expressed needs of industry and labor, with a strong emphasis on ease of access for the student. The private sector specifically requested these training initiatives and has had an ongoing commitment in planning, design, and implementation.

For a graphic representation of the timelines for this project see page 5, Timelines by Objectives.

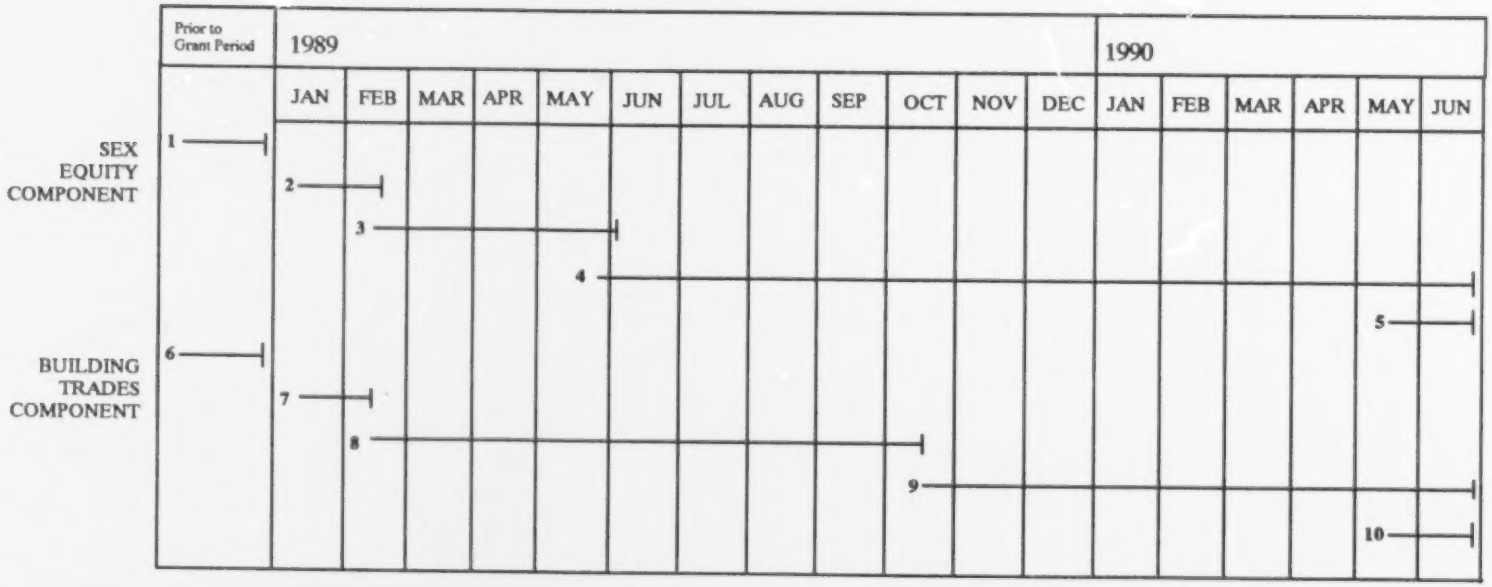
Sex Equity Component

The college had completed an extensive two-year study with our High Technology Advisory Committee, in which we identified an un-met need in our existing High Technology offerings.

Our traditional offerings did not address the emerging needs of the Personal Computer (PC) market which is rapidly expanding and has been the growth area in many industries.

Opportunity for employment exists locally (in Iowa) for the High Technology Diploma recipients in most computer and consumer electronics outlets as well as within business and industry. The range of abilities covered by the diploma recipients includes customer relations, software, installation, and maintenance.

INDIAN HILLS COMMUNITY COLLEGE
COOPERATIVE DEMONSTRATION PROGRAM
TIMELINES BY OBJECTIVES



SEX EQUITY COMPONENT

1. Design 13 month High Technology Occupations Core.
2. Conduct assessment for 145 women considering High Technology.
3. Provide upgrading classes for 55 women. (At the Success Center)
4. Provide 13 month High Technology Training Program for 35 women. (High Technology Building)
5. Place 30 women in High Technology private sector employment or specialization training by June 1990.

BUILDING TRADES COMPONENT

6. Design self-paced retraining program in Electronics and Lasers.
7. Conduct assessment for 30 Building Trades workers.
8. Coordinate upgrading activities with apprenticeship program for 25 Building Trades workers. (At Des Moines)
9. Provide self-paced Electronic and Laser course of study for 15 Building Trades workers. (IHCC)
10. 15 Building Trades workers will be retrained and placed in continued employment and/or upgrade employment by June 1990.

The student who completes the requirements for the High Technology Diploma is well qualified to deal with PC's at the "hardware" and "software" levels, as well as PC networks. This is the Personal Computer Systems level person whom our advisors assure us is hard to find and eagerly sought after.

In relation to the sex equity component of the grant, private industry was instrumental in first suggesting the High Technology Diploma Program and in designing the curriculum that makes up the four-term program. In addition, employers are greatly in need of more women in the work place. Hence, they requested and are supportive of a non-traditional approach to allow single parents and/or those with daytime obligations the opportunity to receive high technology training.

After reviewing the private sector recommendations, the total resources of the college, as they relate to this initiative, came into play. The Women's Center staff at Indian Hills, with special components which include services for displaced homemakers, homemakers, single parents, and those interested in non-traditional careers, became actively involved in the planning process. Their special sensitivity to the needs and career goals of this population, complete with an understanding of their financial and scheduling limitations, was an essential element in the project design process.

An additional factor in the planning process within the sex equity component was the Indian Hills S.U.C.C.E.S.S. Center. This center provides assessment/testing, and skills upgrading in basic skills, job specific skills, pre-employment skills, and pre-technical skills. In addition, individual counseling and tutoring was available.

For a graphic representation of the program schedule see page 7, Specific Program Schedule Sex Equity Component.

INDIAN HILLS COMMUNITY COLLEGE
COOPERATIVE DEMONSTRATION PROGRAM
SPECIFIC PROGRAM SCHEDULE
SEX EQUITY COMPONENT

DAYS

1 — 32 | 33 — 64 | 65

TIME: P.M.	TERM 1 (5/30/89) (7/14/89)	(7/15/89) (8/29/89)
5:00-6:40	TECHNICAL COMMUNICATIONS	BASIC ELECTRICITY I
6:50-8:30	TECHNICAL MATHEMATICS I	
8:40-10:20	COMPUTER FUNDAMENTALS	LABORATORY TECHNIQUES
	TERM 2 (8/31/89) (10/13/89)	(10/14/89) (12/1/89)
5:00-6:40	TECHNICAL MATHEMATICS II	HUMAN RELATIONS
6:50-8:30	MICROPROCESSORS I	BASIC ELECTRICITY II
8:40-10:20	DIGITAL CIRCUITS	INSTRUMENTS & MEASUREMENTS
	TERM 3 (12/5/89) (2/1/90)	(2/2/90) (19/90)
5:00-6:40	PC PROGRAMMING	UTC PHYSICS
6:50-8:30	UTC PHYSICS	ANALOG CIRCUITS
8:40-10:20	MICROPROCESSORS II	
	TERM 4 (3/2/90) (5/10/90)	(5/11/90) (6/30/90)
5:00-6:40	UTC PHYSICS	DIGITAL TELECOMMUNICATIONS
6:50-8:30	TELECOM. FUNDAMENTALS	P.C. MAINTENANCE
8:40-10:20	POWER SYSTEMS	COMPUTER PROGRAMMING I

NOTE: DAY 65 IS A STAFF/REGISTRATION DAY.

Building Trades Component

Consistent with the private sector involvement in the sex equity component, the building trades re-training component was initiated by the private sector, and their involvement continued throughout the planning process.

The Iowa State Building and Construction Trades Council and the International Brotherhood of Electrical Workers, in conjunction with South Central Iowa Federation of Labor (AFL-CIO), began meeting with college officials in September of 1987. Their goal was to design a curriculum and a delivery system to provide re-training in new technologies for workers who are presently employed but who lack the skills required to function in the future work environment.

This need for re-training required to retain existing employment and to place Iowa in a more favorable position to attract new industry, was focused specifically on lasers. The laser emphasis fits very well into Iowa's multi-million dollar commitment to laser research and development at the University of Iowa in Iowa City and the Laser Maintenance program at Indian Hills.

The training we conducted consisted of two segments. In the initial segment, electronic and related courses provided the minimum competency for coping with the installation and maintenance training offered in Segment II. The second segment included laser courses that provided a capability for laser installation and maintenance. All of the proposed courses had been examined with the intent of incorporating as much hands-on-lab as possible. These courses of study occurred on Fridays and Saturdays, and for the most part, were attended by people presently employed in the building trades.

The Iowa State Building and Construction Trades Council representatives were extremely sensitive to the scheduling and financial needs of these employees, who traveled significant distances and committed off-days and/or weekends to the re-training effort.

For a listing of the program schedule see page 9, Specific Program Schedule Building Trades Component.

INDIAN HILLS COMMUNITY COLLEGE
COOPERATIVE DEMONSTRATION PROGRAM
SPECIFIC PROGRAM SCHEDULE
BUILDING TRADES COMPONENT

Recommended Sequence	Course Title	Percent Lecture	Percent Lab	Length in Hours
	SEGMENT 1: BASIC CURRICULUM			
1	Introduction to Lasers	70	30	60
2	Technical Math (Algebra/Trig.)	100	0	64
3	Physics	50	50	56
4	Human Relations	100	0	20
5	Drafting	40	60	40
6	PC Programming/Maintenance	50	50	48
7	Digital Circuits	40	60	48
8	Analog Circuits	50	50	48
				384
	TOTAL SEGMENT 1 HOURS: 384 (32 weekends)			
	SEGMENT 2: LASER MAINTENANCE			
9	Laser Safety	90	10	12
10	Geometrical Optics	50	50	36
11	Laser Components/Devices	50	50	36
12	Laser Cooling Systems	50	50	12
13	Laser Vacuum Systems	50	50	12
14	Laser Alignment	10	90	48
15	Laser Electronics	75	25	60
16	Laser Applications	90	10	36
17	Laser Systems (Work Cells)	25	75	60
18	Laser Troubleshooting	20	80	60
				372
	TOTAL SEGMENT 2 HOURS: 372 (31 weekends)			
	TOTAL HOURS SEGMENTS 1 & 2: 756 (63 weekends)			

STUDENTS SERVED

The number of prospective students contacted and accepted at the beginning of the program was above the projected level. However, the number of students actually entering the programs in both components were below expectations.

The major reason for the lower than expected enrollments appeared to be the time commitment required. This extra-ordinary commitment in student hours was the result of a combination of the level of achievement desired and the limited time frame of the grant.

However, those students that did commit the time and effort required were very pleased with themselves and met or exceeded their expectations. The specific numbers of students in each component of the project are clarified in the remainder of this section. The actual and perceived results of the training are included in the Evaluation section.

In retrospect, to enroll higher numbers we should probably have found some means of conducting this project, especially the sex equity component, on an 18 or 24 month schedule rather than the 13 months allowed via the grant. Yet, the 13 month schedule did provide a smaller but highly motivated and dedicated group of women who are very proud of their achievements.

As a result of this cooperative demonstration experience, we at IHCC have incorporated the sex equity component of this training program as an expanded, evening offering on a 24 month schedule.

Sex Equity Component

The enrollment data is provided in this section as a numerical comparison between the projected numbers, as specified in the relevant objectives contained in the grant proposal, and the actual number of enrollees.

The following is a compilation of the Sex Equity Component Process and Performance objectives (pages 10 and 11 of the grant proposal):

* Conduct assessment activities for one hundred forty-five (145) women who are interested in considering high technology as a career.

* Provide upgrade classes for fifty-five (55) women, following an evening schedule, to include basic skills, job specific skills, pre-employment skills, and pre-technical skills.

* Provide a 12 month (4 term) High Technology Training Program for thirty-five (35) women, following an evening schedule, resulting in entry-level high technology employability for program completers.
  Note: The 12 month program was adjusted to 13 months.

* Thirty women will be placed in high technology private sector employment or enroll in specialized training by May of 1990.

For a graphic representation of the projected and actual student numbers in the Sex Equity Component, see the chart on page 13 - Projected and Actual Student Numbers.

A secondary benefit derived from the assessment objective was the counseling of women not interested in high technology careers so that guidance into other productive endeavors could be explored and made accessible. The chart, Total Benefits of Assessment on page 14 shows the number of prospective students assessed and their range of choices.

The net results indicated that of the 134 prospective students who completed the assessment process, 95 of them (71%) benefited from the experience by being encouraged towards self-improvement via education.

Building Trades Component

The data provided in this section illustrates a numerical comparison between the projected numbers as specified in the relevant objectives contained in the grant proposal, and the actual number of enrollees.

The following is a compilation of the process and performance objectives for the Building Trades Component (page 11 of the grant proposal):

* Conduct assessment activities for thirty (30) Building Trades workers who need retraining to become current in their trade.

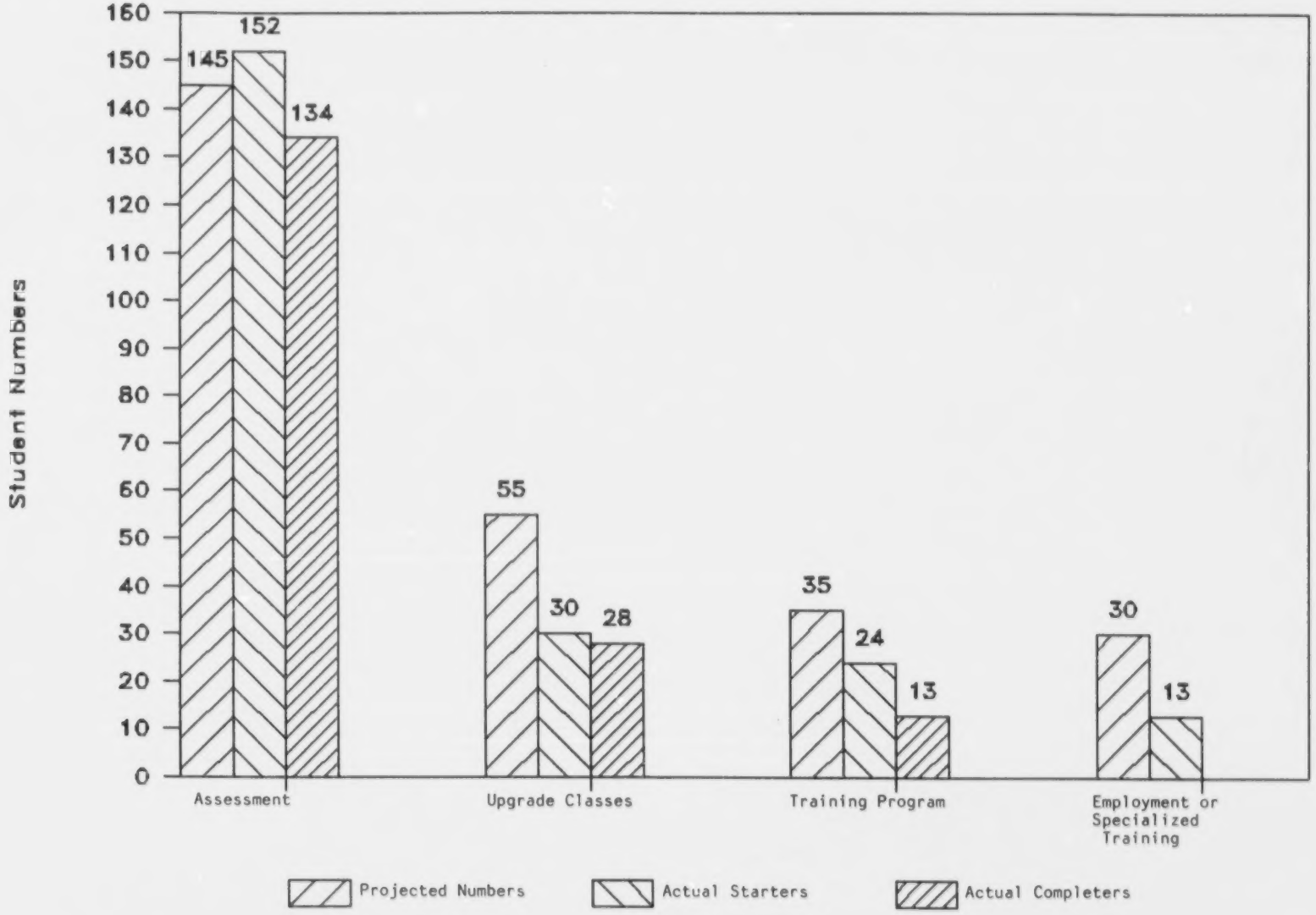
* Coordinate upgrading activities for twenty-five (25) Building Trades workers in conjunction with the Private Sector Apprenticeship Program.

* Provide an on-going, self-paced electronic and laser course of study, following an evening/weekend schedule, for fifteen (15) Building Trades workers.

* Fifteen Building Trades workers will be re-trained and placed in continued employment and/or upgraded employment by May 1990.

For a graphic representation of the projected and actual student numbers in the Building Trades Component see the chart, on page 15 - Projected and Actual Student Numbers.

INDIAN HILLS COMMUNITY COLLEGE
COOPERATIVE DEMONSTRATION PROGRAM
SEX EQUITY COMPONENT
PROJECTED AND ACTUAL STUDENT NUMBERS



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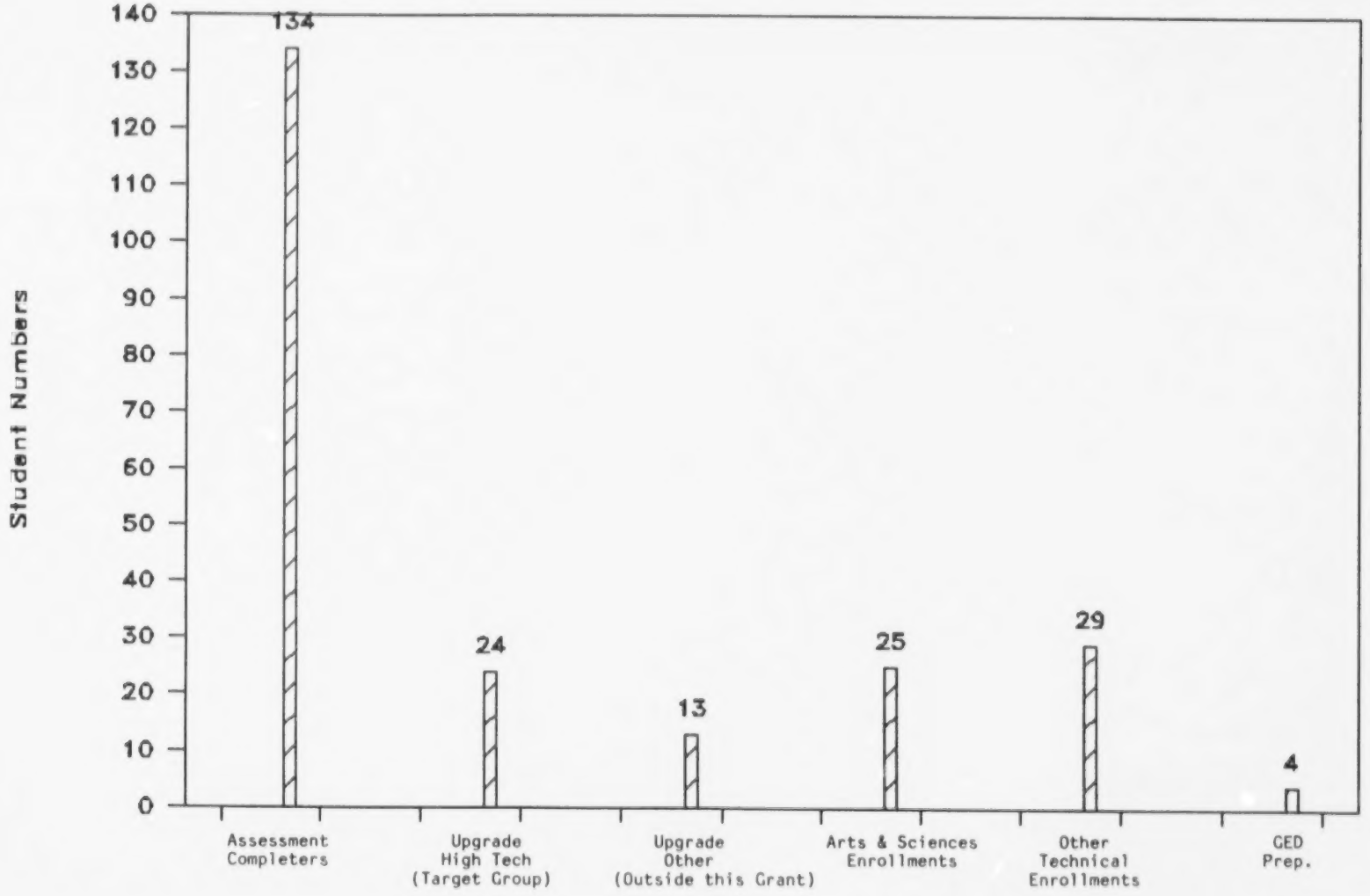
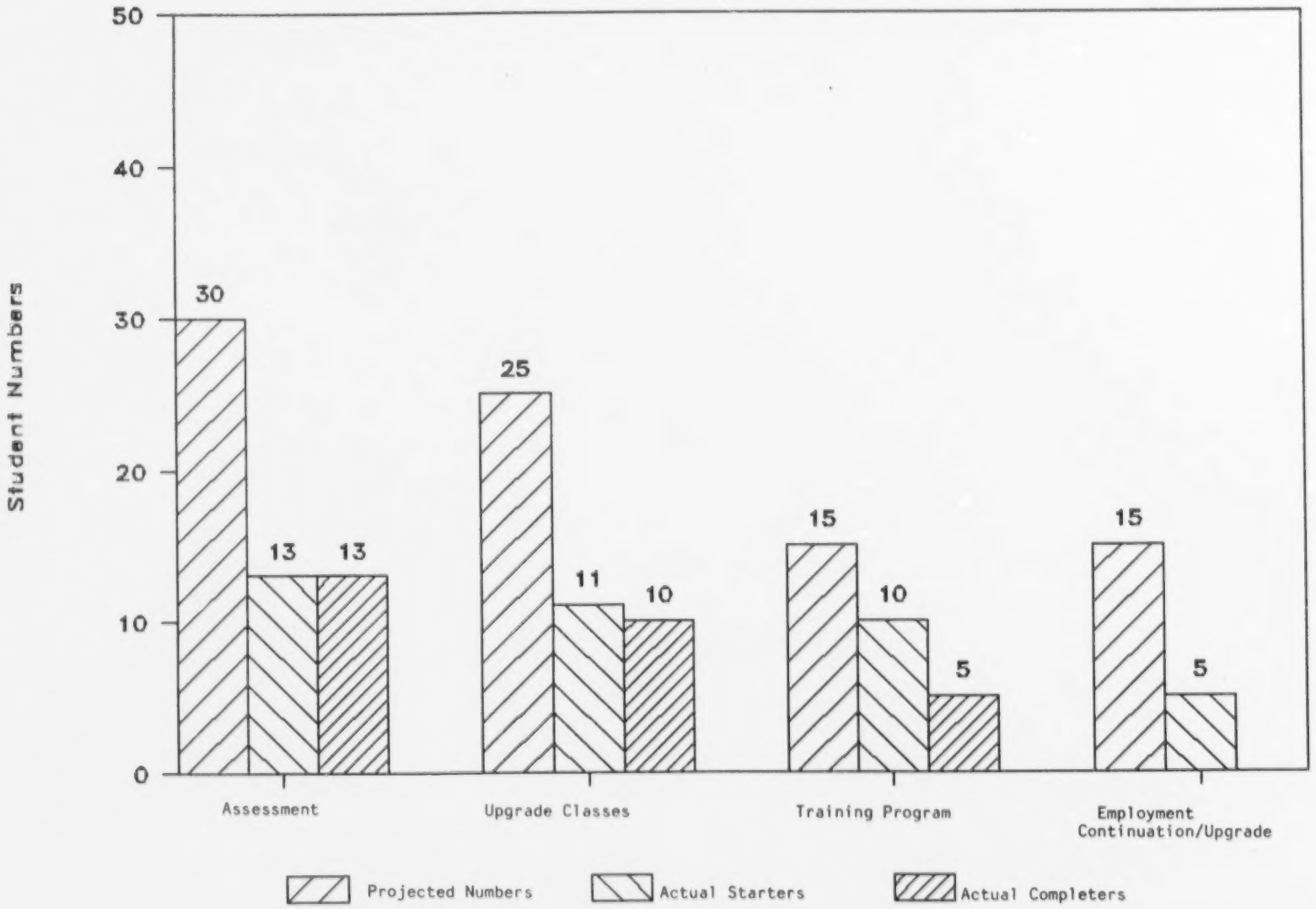
INDIAN HILLS COMMUNITY COLLEGE
COOPERATIVE DEMONSTRATION PROGRAM
SEX EQUITY COMPONENT
TOTAL BENEFITS OF ASSESSMENT



INDIAN HILLS COMMUNITY COLLEGE
COOPERATIVE DEMONSTRATION PROGRAM
BUILDING TRADES COMPONENT
PROJECTED AND ACTUAL STUDENT NUMBERS



REPLICATION POTENTIAL

While the objectives and the curricula presented under this program are replicable, it is now felt that the scope of the training was too ambitious for the time frame.

Sex Equity Component

This project targeted women, specifically, for training in the high technologies. There has been two immediate and positive results of this approach. First, the project produced thirteen well-qualified women in non-traditional occupations. Second, the outreach efforts, advertisements, and news spots associated with the project have had a positive impact in our geographic area on attitudes relative to women in the technologies.

The main concern about replicating this program is the time element. In practice it was found to be too rigorous for most potential students. This we feel was the primary factor that caused our lower than expected enrollment. When we incorporated this program it was expanded to a twenty-four month, evening offering and was opened to all interested persons. Under this schedule we have already enrolled thirty-two students without the advantage of the needs based allowances provided by the grant. Of the thirty-two students, nine are women.

Building Trades Component

The Building Trades component was open to both men and women. Again the rigor of the program appeared to be the main deterrent to full enrollment. Only one woman entered the program and she was unable to complete due to intervening commitments. This component of the program produced an excellent laser upgrade curriculum for journeymen electricians. However, if it were to be incorporated as an ongoing offering, it is felt that the delivery method would need to be altered. Perhaps a facilitated, flexible hours approach would be more attractive to a wider range of electrical workers.

DISSEMINATION

Efforts at dissemination have occurred throughout the grant period in both the Sex Equity and Building Trades components.

In the early phases of the grant, promotional information was delivered to administrative personnel within the college. Outreach information was sent to all school districts and key personnel in community and public agencies.

Newspaper ads, news releases and radio spots were sent to all newspapers and radio stations in our ten-county area. The International Brotherhood of Electrical Workers (IBEW) featured the program in their December, 1988 newsletter.

As the grant progressed, an information packet, WOMEN IN TECHNOLOGY, (see Appendix B) was disseminated on a national basis at the following conferences:

* Texas Instruments Technology Career Symposium at which 45 colleges/institutions from 22 states were represented.

* AACJC National Convention in Seattle, Washington during April, 1990.

Sample news release:

The Ottumwa Courier, Thursday, March 30, 1989 15

IHCC offers special high tech course for women

A one-year course of study in high technology training for women will be taught at Indian Hills Community College in Ottumwa beginning at the end of May.

Women successfully completing the program will receive a high technology occupations diploma and will have the option of finding employment in a related area or continuing training in a specialized high tech field.

Areas include robotics/automation, laser/electro-optics, electronics/telecommunications, and computer maintenance.

Vicki Brown, coordinator/counselor of sex equity at Indian Hills, said single, female parents have first priority. However, she is encouraging married women and single women to look into the program.

Special financial assistance is available, on a needs basis, to help cover the costs of tuition, fees, transportation, and child care for those involved in the program.

Brown said women currently are going through assessment at the college's SUCCESS Center, which provides testing and upgrading of remedial and developmental studies.

Women interested in the high tech study program should apply as soon as possible for assessment.

Two women currently updating their skills are LaDonna Fechtling of Albia and Carmen Shifflett of South English.

"I wanted to enroll in the high tech training program because I was at a point in my life when I needed a change in direction," said Fechtling, who plans to continue working full-time. "This program appealed to me because high technology is the new wave of the future."

Shifflett said, "Attending classes at night will work out great for me because I'll be able to take care of my children during the day. I'm more of a night person anyway. I'm really excited about starting the program."

Women approved for the 12-month course of instruction will attend classes Monday through Friday from 5 to 10:30 p.m. beginning May 30.

"The program will give women a chance to raise their salaries by going to school at night," Brown said. "It allows them to be with their children, babysit, or work during the day."

The high technology training program is being funded through a grant from the U.S. Office of Education.

For information, contact Brown at 515-683-5231 or toll-free, 1-800-362-2585, ext. 231.

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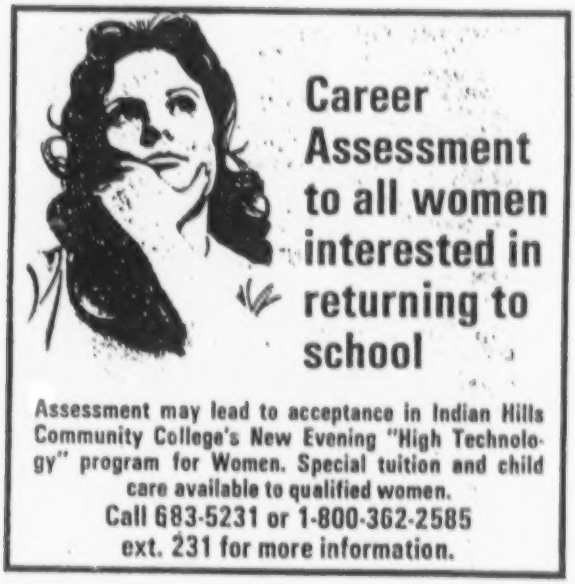
Sample Advertisement:


Career Assessment to all women interested in returning to school
Assessment may lead to acceptance in Indian Hills Community College's New Evening "High Technology" program for Women. Special tuition and child care available to qualified women.
Call 683-5231 or 1-800-362-2585 ext. 231 for more information.

LASER TRAINING

The following people have expressed an interest in the Laser Training course offered by Indian Hills Community College:

Bill O'Donnell
Bob Pool
Jerry Reeves
Mike Schweiger
Kelly O'Brien
Tony Rivas
Joe Rivas
Pat McDonald
James Lundberg
Ramona Fuller
Joe Riley
Mike Milobar
Dan Norris
Mike Steck
Grant Harter
Craig Rahm
Bob Thomas
David Wicker
Marty Belcher
Steve Jones
Dan Johnson
Jim Rogers
Mike Walsh
Frank Rivera
Audie Henderson
Howard Shearer
Bob Pool
Dick Fuller
Jon Kirkhart

Orientation for the course will be on Friday, January 13th at 6:30 p.m. Asset testing will begin on Saturday morning. Every Friday evening and Saturday morning for the next three (3) weeks, participants will have the ability to test out of the pre-requisites.

Selection of the class will be determined by the college, through these testing scores. There is a limit on class size.

To assist the college in bringing the proper materials, we must have the correct number of those attending. If your name is not on the above list, but you are interested, please complete the application. The application MUST be completed and returned, if you plan to attend the orientation. It be in our office PRIOR TO JANUARY 10, 1989.

- -

PLEASE PRINT

Name_____

Address_____

City_____ State_____

Zip_____ Phone_____

S.S. #_____

Date of Birth_____

Please complete and return to:

Local Union #347, I.B.E.W
850 18th Street
Des Moines, Iowa 50314

EVALUATION

The unit (per student) costs were above expectations. This was due to the lower than expected actual enrollments in both the Sex Equity and Building Trades components of the grant. However, the value attached to the wider acceptance of women in our technology programs and the subsequent incorporation of non-traditional, credit bearing programs in an evening setting are not directly measurable. In the larger perspective, it is this breakthrough in attitudes and greater acceptance of non-traditional careers for women that suggests that the total investment of Federal and local dollars in this project was indeed worthy.

Because students were funded through both Federal and local sources, two per student cost figures will be given. Per student costs will be figured simply as the grant expenditures divided by the students served. Grant expenditures were: $296,639 Federal, $98,883 local, and $35,000 in-kind contributions for a grant total of $430,522.

* Total participants served through both components of the grant, considering <u>all funding:</u>

  Projected: $\frac{\$430,522}{175 \text{ participants}} = \$2,460/\text{participant}$

  Actual: $\frac{\$430,522}{147 \text{ participants}} = \$2,928/\text{participant}$

* Total participants served through both components of the grant, considering <u>Federal funding only:</u>

  Projected: $\frac{\$296,639}{175 \text{ participants}} = \$1,695/\text{participant}$

  Actual: $\frac{\$296,639}{147 \text{ participants}} = \$2,017/\text{participant}$

APPENDICES

APPENDIX A
Monitoring Groups

APPENDIX B
Women in Technology

APPENDIX A

MONITORING GROUPS

* External Evaluation Committee (Advisors):

Curt Zimmerman	Laboratory Control	Ottumwa
Shirley Hope (chairperson)	Mid States Distributing	Ottumwa
Everet Beenken	Computerland	Ottumwa
Fred Jenkins	Jenkins Electronics	Centerville
Tom Piper	John Deere	Ottumwa
Julie Richards	Wal-Mart	Ottumwa
David Costello	Rubbermaid	Centerville
Laura Shivvers	Hy-Vee Corporation	Chariton
David Ellis	Radio Shack	Coralville
Victor Lundy	Iowa Dept. of Education	Des Moines

* IHCC Task Force:

Chuck Lawson	Executive Dean of Instruction
Curt Bloomquist	Dean, Technical Division & Grant Supervisor
Bob Wells	Dean, Adult and Continuing Education
Lee Pulis	Chair, High Technology Department
Mary Stewart	Chair, SUCCESS Center
Keveen Krieger	Development Office
Ann Johnston	Business Office
Vicki Brown	Sex Equity Coordinator
Jim Billman	Grant Coordinator

APPENDIX B

WOMEN IN TECHNOLOGY

This overview report of the Sex Equity component of the grant was developed for dissemination to interested colleges and institutions.

INDIAN HILLS COMMUNITY COLLEGE COOPERATIVE DEMONSTRATION PROGRAM: 1989-90

WOMEN IN TECHNOLOGY

Career Assessment to all women interested in returning to school

Assessment may lead to acceptance in Indian Hills Community College's New Evening "High Technology" program for Women. Special tuition and child care available to qualified women.

Call 683-5231 or 1-800-362-2585 ext. 231 for more information.

525 Grandview
Ottumwa, Iowa 52501

FOR: Technology Symposium, Texas Instruments Inc., Dallas, Texas, June 1989

C O N T E N T S

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I. INTRODUCTION

A. Purpose:

Indian Hills Community College, The U.S. Department of Education, and the many members of the public and private sector who have worked with us in the development and awarding of this grant are pleased to be able to provide the women of our area this opportunity.

Our project is truly a cooperative effort, as it is the result of private sector needs being brought to the attention of our college by labor and industry, and our joint effort to design training programs and delivery systems to fit their needs.

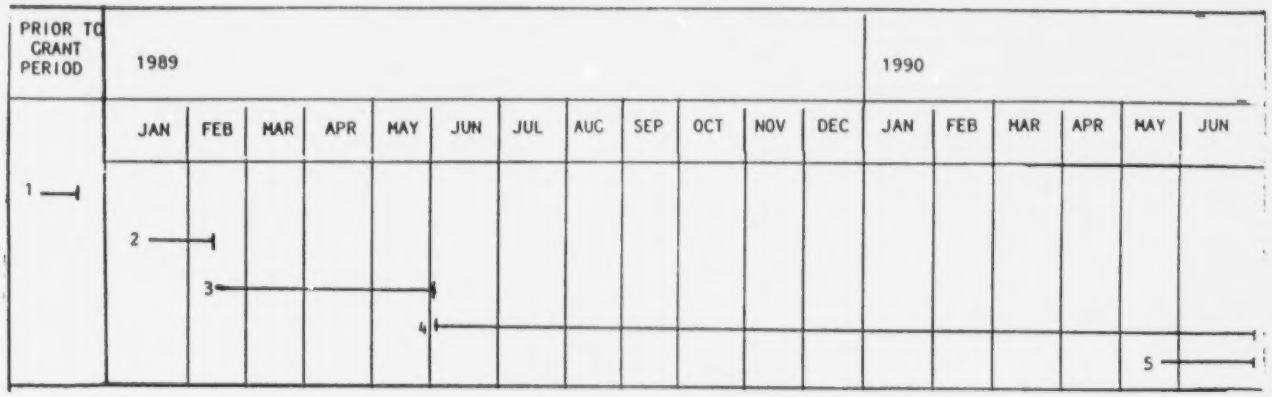
We are proud of the awareness of the private industries in our area for recognizing the need for qualified women in the field of high technology. This targeted effort to train and place women in a non-traditional, emerging career speaks directly to the issue of sex equity in the workplace.

B. Audience

It is the intent of this project to target single parents as the primary group for recruitment into the high technology program for women. However, other women could be included as participants in this training along with the identified group which will receive priority for enrollment.

I. INTRODUCTION (continued)

C. Grant Schedule



EIGHTEEN MONTH TIMELINE BY OBJECTIVES

1. Design 12 months High Technology Occupations Core
2. Conduct assessment for 145 women considering High Technology
3. Provide upgrading classes for 55 women. (At the SUCCESS Center)
4. Provide 13 month High technology Training Program for 35 women. (High Tech Building)
5. Place 30 women in high Technology private sector employment or specialization training by June 1990.

II. BUDGET

A. Allowances

Need based allowances will be provided to program participants for educational and related expenditures to include tuition, books, child care, and travel. The amount of allowance that any particular participant may receive will be determined in light of other financial assistance that they may qualify for (i.e., JTPA, PELL, Voc Rehab, loans, and/or scholarships). It definitely is <u>not</u> our intention that each participant would receive $1,500; rather, we are projecting that $1,500 would be an "average" amount that might be necessary for these non-traditional participants to partake in this training opportunity. Some participants may not need an allowance at all. Other participants may need much more than the $1,500 average in order to participate. It is our intention to explore all existing programs for educational support (those listed above), preliminary to the awarding of the need based allowances to the individual client.

B. Equipment:

The women enrolled in this program will use the same labs and equipment as the traditional, day-time students. However, Indian Hills Community College, as a part of our matching funds for this grant, will enhance these labs through the purchase of the following equipment:

.IBM Pro-Printer II (11 at $300)	3,000
.IBM Auto CAD, Model 25 (1 at $10,000)	10,000
.DEC Telecommunication Modems (8 at $200)	1,600
.Tektronix Logic Analyzer Model 1230	2,750
.Beckman Logic Probes Type LP25 (20 @ $40)	800
.Beckman Logic Pulser Type PR41 (10 @ $45)	450
.Static Generator	500
.Telecommunication Break-out Boxes (2 at $200)	1,000
.Soldering Stations (15 at $40)	600
.Power Supplies (3 at $500)	1,500
.Static Mats (20 at $5)	100
.Unified Technical Concepts Physics Lab Stations (3 at $1,000)	3,000
.Heath Zenith Micro-processor (15 at $1,400)	21,000
.Digital Circuit Trainers (10 @ $200)	2,000
.Tektronix Volt Meter/Signal Generator Package (5 at $4,000)	20,000
.Tektronix Scopes #2213/15 (5 @ $1,400)	7,000
TOTAL NEW EQUIPMENT PURCHASES	$75,000

II. **BUDGET (continued)**

C. **Budget Summary:** Sex Equity Component only

Project Period: 18 **months**

Section A - Budget Summary by Categories (Federal Funds Only)

1.	Salaries and Wages	$138,996
2.	Fringe Benefits	30,578
3.	Travel	2,141
4.	Equipment	-0-
5.	Supplies	2,500
6.	Contractual Services	-0-
7.	Other Allowances: Sex Equity Component 52,500 In-State Travel 1,359	53,859
8.	Total Direct Costs (Total of lines 1 through 7)	228,074
9.	Total Indirect Costs	21,973
10.	Total Project Costs (lines 8 + 9)	250,047

Section B - Cost Sharing

1.	Non-Federal Funds (state, local, etc.)	84,051
2.	In-Kind Contributions	29,750
	TOTAL:	363,848

Note: The percent of total funds financed by the Federal Government is sixty-nine percent (69%)

III. MANAGEMENT PLAN

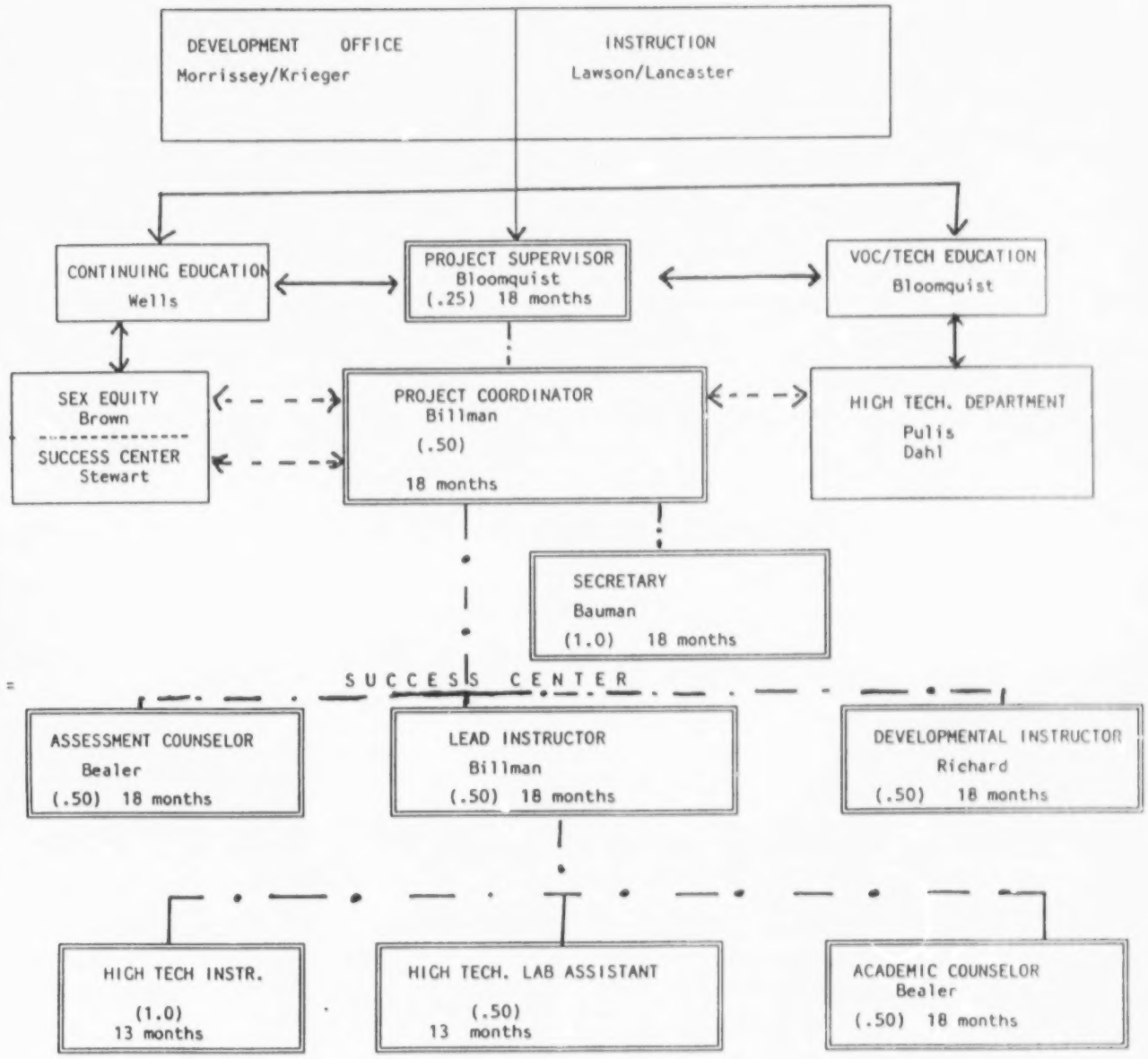
A. Context:

This 18 month grant will be conducted within the context of the existing, related departments and policies of the College. This will result in a need for cooperative, if not direct, working relationships among those staffing the grant and those in existing, related departments. Chart 1, the program organizational chart, indicates the intended relationships.

B. Accessibility:

All staff members hired specifically for this grant will be paid directly from the grant, and will be required to work according to the grant time-frames and calendar which follow. In essence, the normal college calendar will be followed until May 30, 1989, whereas after this date, a calendar unique to the grant will be in effect. Due to the increased number of instructional days required between May 30, 1989 and June 30, 1990, the staff will work a reduced number of hours per day so the total hours worked per year under a normal contract is not exceeded.

See the Staff Accessibility Charts 2 and 3 for clarification.



KEY:

- Existing, Related Departments
- Project Staffing (.50) = half time, etc.
- College/Project policies, coordination, conflict resolution
- College/Project Strategic planning
- Project Administration

CHART 2

COOPERATIVE DEMONSTRATION PROJECT

Staff Accessibility

MONDAY - THURSDAY

January 1989 - May 29, 1989
(Based on School Calendar, IHCC is on a four (4) day week)

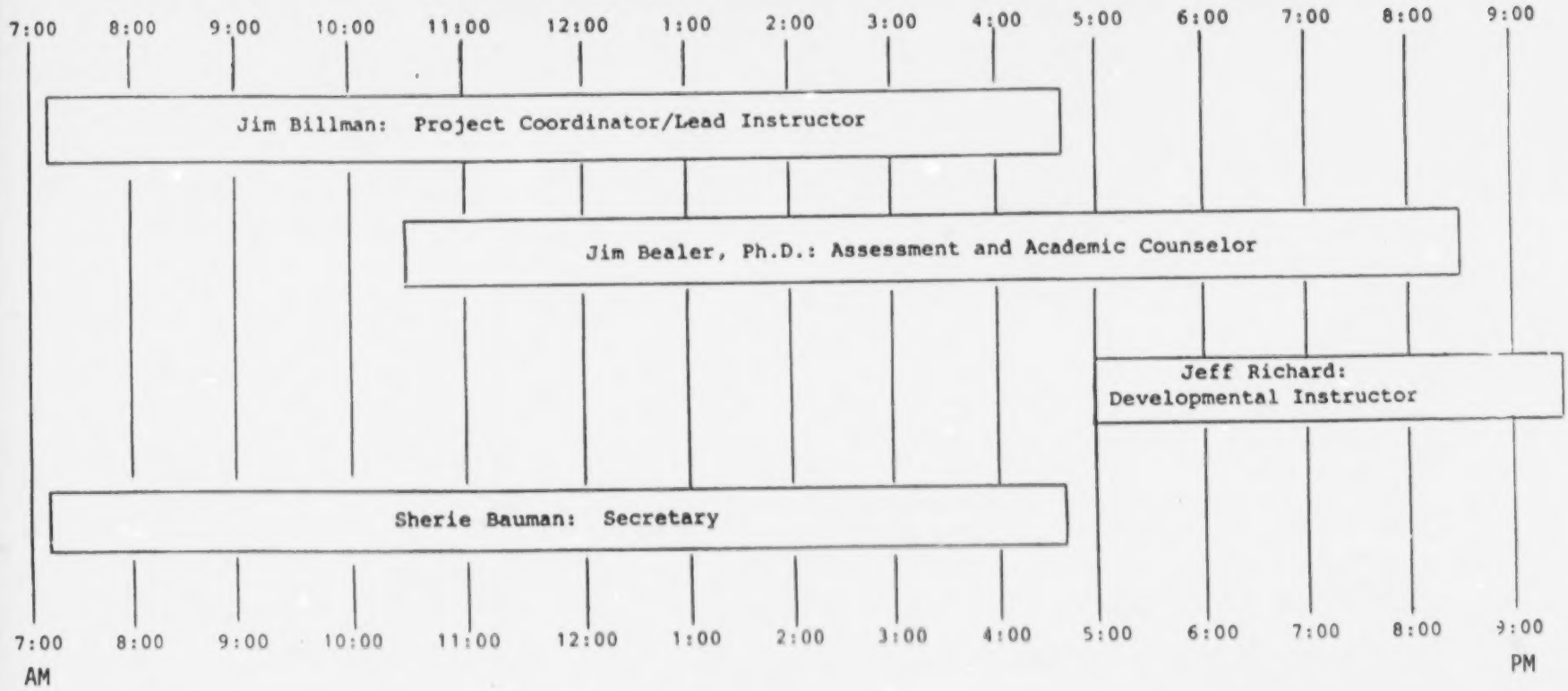


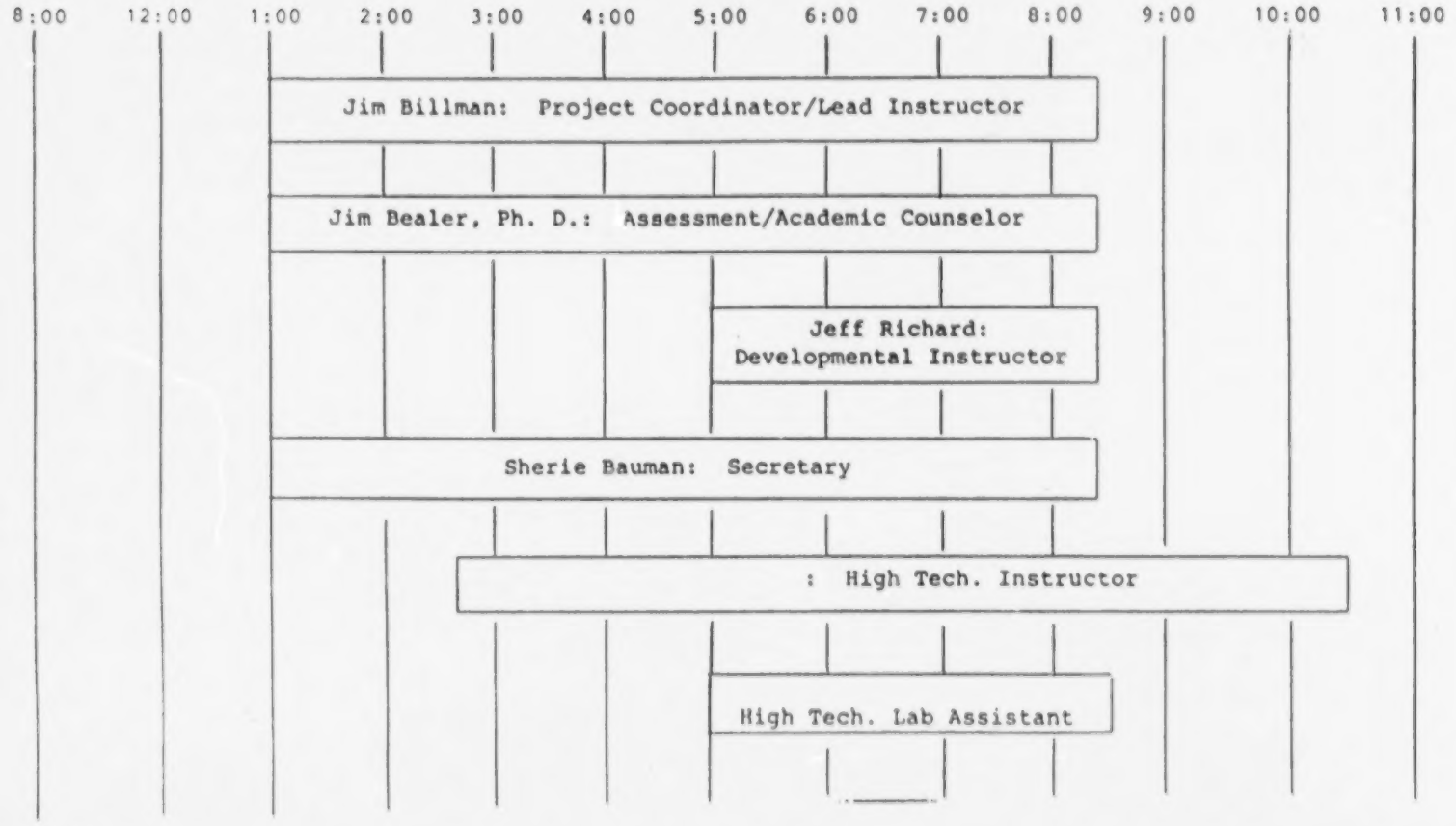
CHART 3

COOPERATIVE DEMONSTRATION PROJECT

Staff Accessibility

MONDAY - FRIDAY

May 30, 1989 - June 30, 1990
(Based on Grant Calendar)



AM 42

PM 43

IV. INSTRUCTIONAL PROGRAM

A. General Guidelines:

The following guidelines and rationale were used in establishment of the instructional schedules.

. Training will be done during evening hours to accommodate the target population.

. Participants would attend classes approximately 5 hours per day

. Legal holidays will be observed as indicated on the college instructional calendar, however "school closed", beginning and ending terms, registration and staff days may not coincide.

. There should be no less than two and not more than three classes taught concurrently during a term.

. The pace of the courses should be reduced if possible. This will be accomplished by extending the training time to 13 months rather than the customary 12 months.

. The project must maintain at least as many contact hours per course as the regular day program. (For example: a one-period class is 65 minutes per day for 48 days equaling 3120 minutes. 3120 minutes per term equals 525 contact hours.) Breaks between classes are excluded from these calculations.

B. Instructional Schedule:

The following scheduling criteria comply with the General Guidelines listed in the previous section.

. Classes will meet 5 nights per week, 13 weeks per term. (5 meetings/wk x 13 weeks = 65 days. 65 days = 64 class days + 1 staff/registration day).

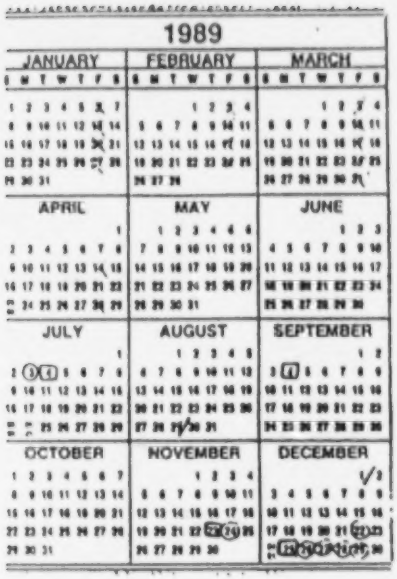
. Class periods will be 100 minutes each (1 hr., 40 minutes). This provides 53.3 contact hours per term which is 1.3 hours more than the day program (100 minutes x 32 days = 3200 minutes = 52.3 hours)

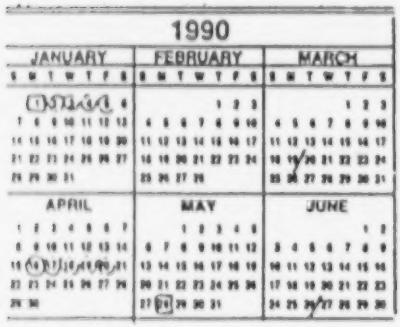
. Lecture/Laboratory percentages will be the same as in the day program.

. The same course materials, guides, texts and laboratories will be used as in the day program.

. See Chart 4 Instructional Calendar; and Chart 5, Schedule of Courses for clarification.

CHART 4





Calendar Key:

- [ ] Legal Holiday, no School
- / End of Term
- ○ School Closed
- X 4-Day Work Week

INSTRUCTIONAL CALENDAR

Jan. - Feb. 1989 Assessment Activity
Mar. - May 1989 Upgrade Training

(Note: Specific schedules for assessment and upgrade training will be determined by the SUCCESS Center on an as needed basis, in compliance with the College Instructional Calendar. Daily hours will be in compliance with grant requirements.)

May 18, 1989	Applicants register for High Tech. occupations diploma program (5:00 - 8:00 p.m.)
May 22-26, 1989	School closed
May 29, 1989	Memorial Day
May 30, 1989	Start TERM 1

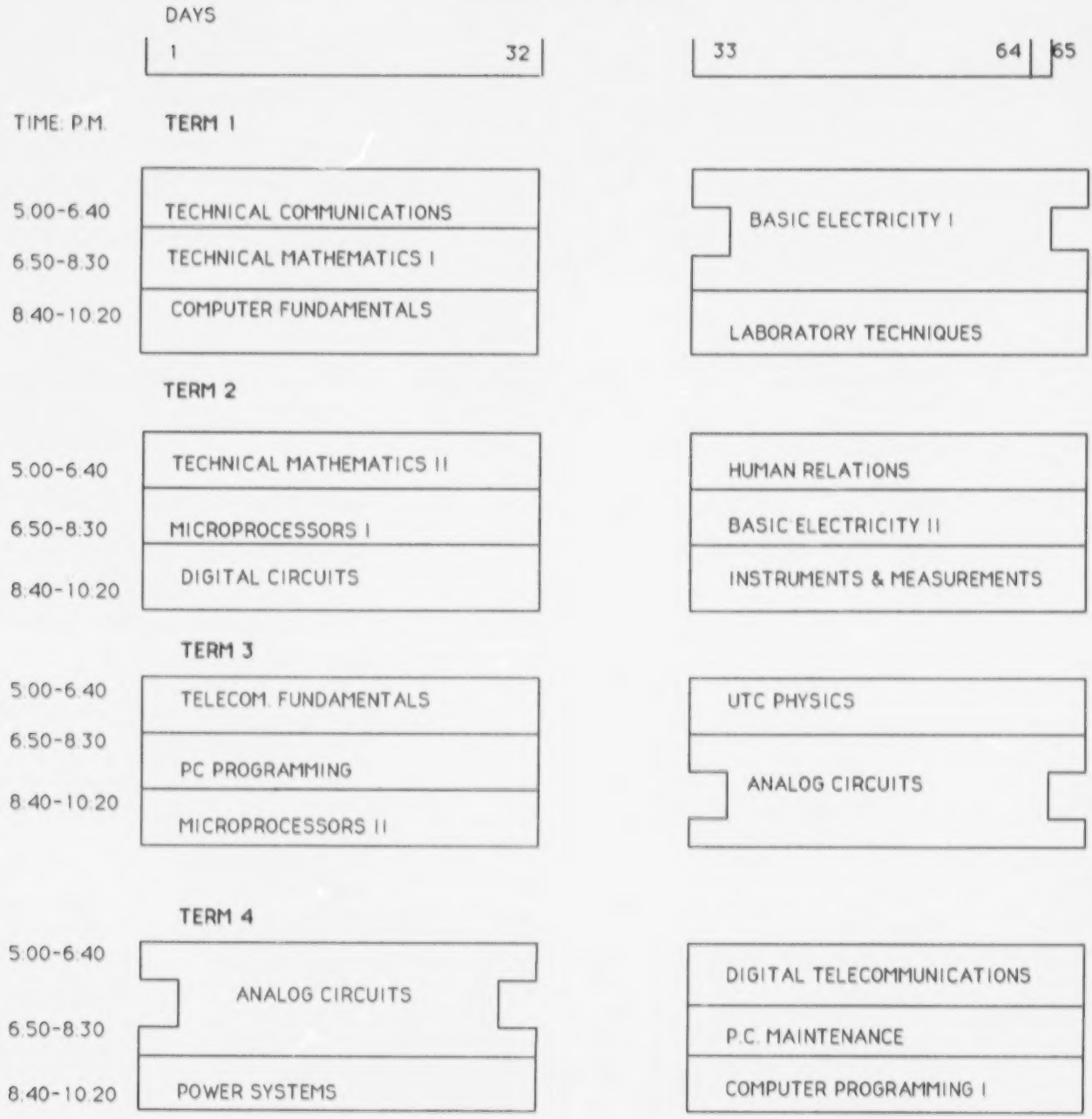
(May 30, 1989 thru June 30, 1990 Sex Equity students and staff will work according to the following Grant Instructional Calendar.)

July 3-4-,1989	School closed, July 4th holiday
Aug. 29, 1989	End TERM 1
Aug. 30, 1989	Staff day/student registration, TERM 2 (5-8 p.m.)
Aug. 31, 1989	Start TERM 2
Sept. 4, 1989	Labor Day
Nov. 23-24, 1989	Thanksgiving, school closed
Dec. 1, 1989	End TERM 2
Dec. 4, 1989	Staff day/student registration, TERM 3 (5-8 p.m.)
Dec. 5, 1989	Start TERM 3
Dec. 22 - Jan. 5	School closed, Christmas/New Years
Mar. 19, 1990	End TERM 3
Mar. 20, 1990	Staff day/student registration, TERM 4 (5-8 p.m.)
Mar. 21, 1990	Start TERM 4
Apr. 16-20, 1990	School closed, Spring Break
May 28, 1990	Memorial Day
June 26, 1990	End TERM 4
June 27-29, 1990	Staff days -- end of project

Note: All holidays and the Spring (Easter) break will be observed as per the school calendar. However, students and staff will work during the August and May breaks.

CHART 5

SCHEDULE OF COURSES



NOTE: DAY 65 IS A STAFF/REGISTRATION DAY.

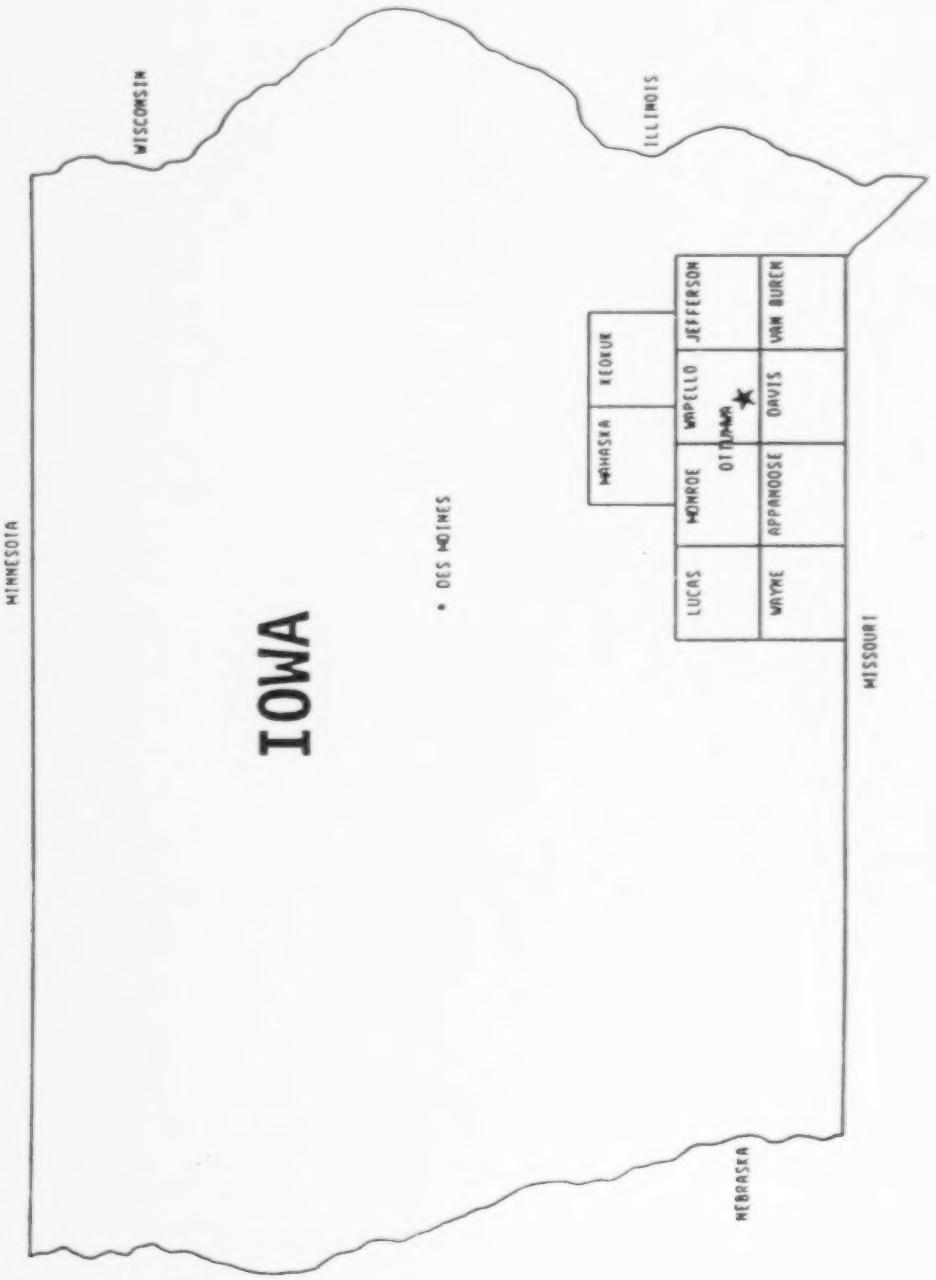
APPENDICES

A. Geographic Area

B. Traditional Program

APPENDIX A: GEOGRAPHIC AREA

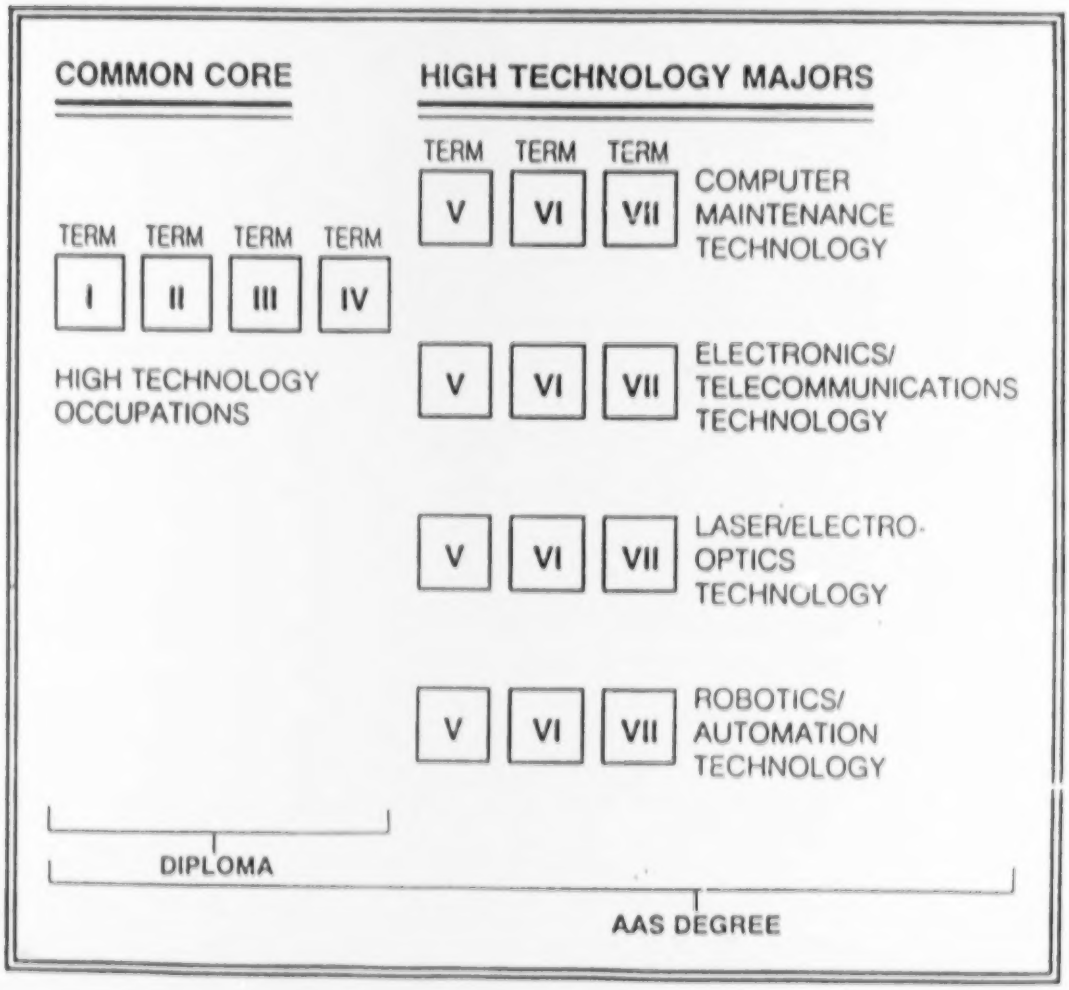
INDIAN HILLS COMMUNITY COLLEGE
MAP OF COLLEGE SERVICE AREA



HIGH TECHNOLOGIES

IHCC's five High Technology program offerings are all based on applications of electricity, electronics, mechanical automation, and optics to specialized industrial technician occupations. The initial 12-month, four-term,"core" sequence of classroom and laboratory instruction is exactly the same for each of the program choices. All students completing the "core" are awarded a diploma, which recognizes attainment of basic skills in electronic system technologies. Students who complete the core may choose to seek employment immediately, or elect to continue for three additional terms (nine more months) to concentrate their studies in one of four majors leading to award of an Associate of Applied Science degree. The four High Technology Department majors offered at IHCC are: Computer Maintenance Technology, Electronics/Telecommunications Technology, Laser/Electro-Optics Technology, and Robotics/Automation Technology.

Each academic term is 12 weeks in length. The total program length for an AAS degree in any one major is 21 months. A double major is possible in just 30 months. The concept of the common core leading to a diploma, with extended studies leading to AAS degrees in four majors, is shown graphically below.



HIGH TECHNOLOGY OCCUPATIONS

This full time, 12-month, four-term program offers broad-based training in basic electricity, basic electronics, personal computer programming, and personal computer repair, as well as applied mathematics, communication skills, and systems level applied physics. To enroll, a student must complete an application and attend any required academic orientation and information session. Students may enter the program in fall, winter, or spring terms. Students meeting all program and graduation requirements receive a diploma. Course titles and credit hours are listed below.

Catalog Number	Term I Course Name	Credit
EL050U	Computer Fundamentals	2
EL714U	Basic Electricity I	4
EL711U	Lab Techniques	2
EL034U	Technical Math I	2
EL710U	Technical Communications	2
	Total	12

Catalog Number	Term II Course Name	Credit
EL008U	Microprocessors I	2
EL720U	Basic Electricity II	2
EL722U	Instruments & Measurements	2
EL721U	Digital Circuits	2
EL035U	Technical Math II	2
EL036U	Human Relations	2
	Total	12

Catalog Number	Term III Course Name	Credit
EL731U	Microprocessors II	2
EL734U	Telecom. Fundamentals	2
EL733U	PC Programming	2
EL730U	Analog Circuits	4
EL735U	UTC Physics I	2
	Total	12

Catalog Number	Term IV Course Name	Credit
EL741U	PC Maintenance	2
EL218U	Digital Telecommunications	2
EL251U	Computer Programming I	2
EL732U	Power Systems	2
EL743U	UTC Physics II	3
	Total	11

NOTE: The Traditional Program is taught on a four (4) day schedule. Extended days are used as the means for generating the required contact hours per term.